

## **LISTING OF CLAIMS**

The listing of claims provided below replaces all prior versions, and listings, of claims in the application.

- 5           1.       (Currently Amended) A method comprising:
- obtaining image data on a server, the image data defining a complete image having a horizontal extent and a vertical extent when rendered in a display;
- clipping said image data on said server to obtain clipped image data, the clipped image data representing a portion of the complete image when rendered in the display;
- 10           transmitting said clipped image data from a transmitter on said server via a computer network without conversion to a receiver on a client;
- said receiver scaling said clipped image data for display; and
- said receiver displaying said scaled clipped image data,
- wherein clipping said image data includes obtaining by said server a clip-list
- 15 specifying at least one clipping rectangle region, the at least one clipping rectangle region defining a portion of the complete image having the horizontal extent and the vertical extent, [[ $\frac{1}{2}$ ]] and
- wherein clipping said image data includes mapping by said server of said at least one clipping rectangle region to said image data to determine said clipped image data,
- 20 wherein the mapping includes determining for each of two diagonally opposed corner locations of said at least one clipping rectangle one respective [[a]] nearest pixel in said image data ~~to a corner location of said at least one clipping region.~~

2-3.   (Cancelled)

25

4. (Previously Presented) The method of Claim 1, wherein determining a nearest pixel is based on a Euclidean distance.

5. (Cancelled)

5

6. (Previously Presented) The method of Claim 1, wherein said clipped image data are further compressed, wherein said clipped and compressed image data comprises one or more subsampled chroma components and one or more differentiated and quantized luma components, and wherein determining said nearest pixel further  
10 comprises:

determining a plurality of pixels that comprise samples from said one or more subsampled chroma components and values from said one or more differentiated and quantized luma components; and

determining said nearest pixel from said plurality of pixels.

15

7. (Currently Amended) The method of Claim 1, wherein said at least one clipping rectangle ~~region~~ comprises a plurality of clipping rectangles ~~regions~~, and wherein mapping comprises mapping said plurality of clipping rectangles ~~regions~~ to a plurality of regions of image data.

20

8. (Currently Amended) The method of Claim 7, wherein transmitting comprises individually transmitting said plurality of clipping rectangles ~~regions~~ of image data.

9. (Previously Presented) The method of Claim 7, wherein scaling comprises independently scaling up said plurality of regions of image data by said client to fill respective regions of a display.

5 10. (Previously Presented) The method of Claim 9, wherein said independently scaling said plurality of regions of image data comprises applying independent scale factors that reduce scaling along a horizontal axis and increase scaling along a vertical axis.

10 11. (Currently Amended) A computer readable medium encoded with computer ~~including~~ program instructions for processing image data, the computer program instructions comprising:

program instructions for directing a server to obtain image data, the image data defining a complete image having a horizontal extent and a vertical extent when rendered  
15 in a display;

program instructions for directing said server to clip said image data to obtain clipped image data, the clipped image data representing a portion of the complete image when rendered in the display;

program instructions for directing said server to transmit said clipped image data  
20 via a computer network without conversion to a receiver on a client;

program instructions for directing said receiver to scale said clipped image data for display; and

program instructions for directing said receiver to display said clipped image data,  
wherein said program instructions for directing said server to clip said image data  
25 includes program instructions for directing said server to obtain a cliplist specifying at

least one clipping rectangle ~~region~~, the at least one clipping rectangle ~~region~~ defining a portion of the complete image having the horizontal extent and the vertical extent, and program instructions for directing said server to map said at least one clipping rectangle ~~region~~ to said image data to determine said clipped image data and to cause said server to

5 determine for each of two diagonally opposed corner locations of said at least one clipping rectangle one respective [[a]] nearest pixel in said image data to a corner location of said at least one clipping region.

12-13. (Cancelled)

10

14. (Previously Presented) The computer readable medium of Claim 11, wherein said program instructions for directing said server to determine a nearest pixel determines a Euclidean distance.

15

15. (Cancelled)

16. (Previously Presented) The computer readable medium of Claim 11, wherein said clipped image data are further compressed, wherein said clipped and compressed image data comprises one or more subsampled chroma components and one

20 or more differentiated and quantized luma components, and wherein said program instructions for directing said server to determine said nearest pixel further comprises:

program instructions for directing said server to determine a plurality of pixels that comprise samples from said one or more subsampled chroma components and values from said one or more differentiated and quantized luma components; and

program instructions for directing said server to determine said nearest pixel from said plurality of pixels.

17. (Currently Amended) The computer readable medium of Claim 11,  
5 wherein said at least one clipping rectangle ~~region~~ comprises a plurality of clipping rectangles ~~regions~~, and wherein said program instructions for directing said server to map comprises program instructions for directing said server to map said plurality of clipping rectangles ~~regions~~ to a plurality of regions of image data.

10 18. (Previously Presented) The computer readable medium of Claim 17, wherein said program instructions for directing said server to transmit comprises program instructions for directing said server to individually transmit said plurality of regions of image data.

15 19. (Previously Presented) The computer readable medium of Claim 17, wherein said program instructions for directing said receiver to scale comprises program instructions for directing said receiver to independently scale up said plurality of regions of image data to fill respective regions of a display.

20 20. (Previously Presented) The computer readable medium of Claim 19, wherein said program instructions for directing said receiver to independently scale said plurality of regions of image data comprises program instructions for directing said receiver to apply independent scale factors that reduce scaling along a horizontal axis and increase scaling along a vertical axis.

25

21. (Currently Amended) An apparatus comprising:

a network;

a thin client;

a server configured to obtain image data and perform a mapping of at least one  
5 clipping rectangle region to said image data to obtain clipped image data, the server  
configured to perform the mapping by determining for each of two diagonally opposed  
corner locations of said at least one clipping rectangle one respective [[a]] nearest pixel in  
said image data ~~to a corner location of said at least one clipping region~~, said server further  
configured to transmit said clipped image data over said network; and

10 a receiver on said thin client configured to receive said clipped image data without  
conversion over said network, said receiver further configured to scale said clipped image  
data for display and display said scaled clipped image data.

22. (Currently Amended) The apparatus of Claim 21, wherein said at least one  
15 clipping rectangle region is defined within a clip-list accessible to said server.

23. (Cancelled)

24. (Previously Presented) The apparatus of Claim 21, wherein said server is  
20 configured to determine said nearest pixel based upon a Euclidean distance.

25. (Cancelled)

26. (Previously Presented) The apparatus of Claim 21, wherein said clipped  
25 image data are further compressed, wherein said clipped and compressed image data

comprises at least one subsampled chroma component and at least one differentiated and quantized luma components, and wherein said server is configured to determine said nearest pixel from a plurality of pixels that comprise samples from said at least one subsampled chroma component and values from said at least one differentiated and  
5 quantized luma component.

27. (Currently Amended) The apparatus of Claim 21, wherein said server is configured to map a plurality of clipping rectangles ~~regions~~ to a plurality of regions of image data.

10

28. (Original) The apparatus of Claim 27, wherein said server is configured to individually transmit said plurality of regions of image data to said receiver.

29. (Previously Presented) The apparatus of Claim 27, wherein said receiver is  
15 configured to independently scale up said plurality of regions of image data to fill respective regions of a display.

30. (Previously Presented) The apparatus of Claim 29, wherein said receiver is configured to apply independent scale factors to said regions of image data and wherein  
20 said scale factors reduce scaling along a horizontal axis and increase scaling along a vertical axis.

31-33. (Cancelled).

25 34. (Currently Amended) An apparatus comprising:

means on a server for obtaining image data, the image data defining a complete image having a horizontal extent and a vertical extent when rendered in a display;

means on a server for mapping at least one clipping rectangle region to the image data to obtain clipped image data, wherein the mapping includes determining for each of  
5 two diagonally opposed corner locations of said at least one clipping rectangle one  
respective ~~[[a]]~~ nearest pixel in the image data ~~to a corner location of the at least one~~  
~~clipping region~~, wherein the clipped image data represents a portion of the complete image when rendered in the display;

means for transmitting said clipped image data via a computer network from a  
10 transmitter on said server without conversion to a receiver on a thin client, wherein said computer network is a shared, low bandwidth network; ~~and~~

means, at said receiver, for scaling said clipped image data for display; and

means at said receiver for displaying said clipped image data.

15 35. (Previously Presented) The method of Claim 1, wherein said client is a thin client computer.

36. (Previously Presented) The method of Claim 1, wherein said computer network is a shared network.

20

37. (Previously Presented) The method of Claim 36, wherein said shared network is a low bandwidth network.

38. (Previously Presented) The computer readable medium of Claim 11,  
25 wherein said client is a thin client computer.



39. (Previously Presented) The computer readable medium of Claim 11,  
wherein said computer network is a shared network.

5 40. (Previously Presented) The computer readable medium of Claim 39,  
wherein said shared network is a low bandwidth network.

41. (Previously Presented) The apparatus of Claim 21, wherein said network is  
a shared, low bandwidth network.

10

42. (Cancelled)

43. (Previously Presented) The apparatus of Claim 34, wherein said computer  
network is a digital network.

15

44. (Previously Presented) The method of Claim 36, wherein said computer  
network is a digital network.

45. (Previously Presented) The computer readable medium of Claim 11,  
20 wherein said computer network is a digital network.

46. (Previously Presented) The apparatus of Claim 41, wherein said network is  
a digital network.

47. (Previously Presented) The apparatus of Claim 21, wherein said thin client provides a network interface to a user and wherein said server provides a plurality of computational services removed from said thin client to said user.

5 48. (Previously Presented) The apparatus of Claim 47, wherein said plurality of computational services comprise a computational power and a state maintenance for said thin client.

49. (Cancelled)

10 50. (Previously Presented) The apparatus of Claim 21, wherein said image data is clipped only at said server and said clipped image data is scaled only at said thin client in order to provide greater image data transmission efficiency from said server to said thin client via said network.

15 51. (Previously Presented) The apparatus of Claim 21, further comprising a clip-list identifying visible region displayed on the client, wherein said server is configured to obtain a copy of said clip-list and wherein said copy of said clip-list residing on said server is used by said server to obtain said clipped image data from said  
20 obtained image data.